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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,505	12/28/2001	Kevin X. Zhang	P11682	2608
25694	7590	10/14/2003	EXAMINER	
INTEL CORPORATION P.O. BOX 5326 SANTA CLARA, CA 95056-5326			CONNOLLY, MARK A	
		ART UNIT		PAPER NUMBER
		2185		4
DATE MAILED: 10/14/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/040,505	ZHANG ET AL.
	Examiner Mark Connolly	Art Unit 2185

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 28 December 2001.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-18 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-18 have been presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 6-11, 13 and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Schutz et al¹ [Schutz] US Pat No 5440520.

4. Referring to claim 1, Schutz teaches the invention substantially including:

- a. a first port to receive a supply voltage from an external voltage regulator, the supply voltage to power the processor [fig. 2 and col. 3 lines 59-63].
- b. a voltage sensor to monitor the supply voltage [38 fig. 2 and col. 7 lines 46-51].
- c. a second port to provide a control signal from the voltage sensor to the voltage regulator to indicate if the supply voltage is above or below a target value [fig. 2 and col. 7 lines 46-51].

5. Referring to claim 2, Schutz teaches adjusting a target value [col. 3 line 59-col. 4 line 10].

6. Referring to claim 3, Schutz teaches that adjusting the voltage adjusts the operating frequency of the device [col. 2 lines 8-11]. Therefore, when the Schutz system adjusts its voltage, it inherently adjusts its operating frequency in order to meet a timing requirement.

7. Referring to claim 6, Schutz teaches that integrated circuit (10) can act as a processor

[col. 4 lines 28-29 and 36-39]. Because the voltage sensor (38) is internal to the integrated circuit, it is interpreted that the voltage sensor is a portion of the core of the processor.

8. Referring to claims 7 and 8, Schutz teaches that the integrated circuit (10) includes a memory [col. 7 lines 24-30]. In addition, it is well known in the art that processors include cache memories wherein the integrated circuit (10) is being interpreted as a processor.

9. Referring to claims 9-11, 13 and 15, these are rejected on the same basis as set forth hereinabove.

10. Referring to claim 16, Schutz teaches coupling a Vcc output of the voltage regulator to a Vcc input of the processor [fig. 2].

11. Referring to claim 17, Schutz teaches coupling a Vcc control output of the processor to a Vcc input of the voltage regulator [fig. 2 and col. 3 line 59-col. 4 line 9].

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 4, 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schutz as applied to claims 1-3, 6-11, 13 and 15-17 above, and further in view of Welser et al² [Welser] EP 0632360A1.

14. Referring to claim 4, the Schutz system does not explicitly teach reducing the target value

¹ As cited by the applicant

² As cited by the applicant

if the system is inactive. In summary, Schutz does not explicitly teach reducing the voltage supplied to the system if it is determined that the system becomes idle. Welser teaches that if a system becomes idle, it is advantageous to reduce the voltage supplied to the system in order to conserve power [col. 6 line 18-col. 7 line 22]. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Schutz system to reduce the voltage supplied to the processor when the system becomes idle because Welser teaches that power consumption for the system can be optimized.

15. Referring to claims 12 and 18, these are rejected on the same basis as set forth hereinabove.

16. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schutz as applied to claims 1-3, 6-11, 13 and 15-17 above, and further in view of Shingo et al³ [Shingo] EP 0872790.

17. Referring to claim 5, the Schutz system does not explicitly teach that the voltage sensor (38) includes an op amp. In fact, Schutz does not explicitly teach anything that is included in voltage sensor (38) except only that the voltage sensor compares the input voltage to the required voltage of the system [col. 7 lines 46-51]. Shingo teaches a means to compare an input voltage to a reference voltage using an op amp [col. 3 line 18-col. 4 line 3]. The comparators in Shingo are interpreted as op amps. Shingo explains that by using the op amps the system can monitor whether or not the supply voltage has deviated from a reference voltage. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the Shingo op

³ As cited by the applicant

amps into the Schutz system because the Schutz system requires a means to compare voltages and Shingo teaches a system to provide those means.

18. Referring to claim 14, this is rejected on the same basis as set forth hereinabove.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Connolly whose telephone number is (703) 305-7849. The examiner can normally be reached on M-F 8AM-5PM (except every first Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C Lee can be reached on (703) 305-9717. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Mark Connolly
Examiner
Art Unit 2185

mc
October 8, 2003

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THOMAS LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100